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UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK
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PALADYNE SYSTEMS, Inc., a Delaware Corporation,

Plaintiff,

v.

STPENABLE, LTD., a United Kingdom Company

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Case No. 07 CIV 8421 (LAP)

DECLARATION OF ADRIAN MILEY

Adrian Miley declares as follows:

1. I am the co-founder of Miley Watts LLP, an IT consultancy in the U.K. that specializes in providing information and data architecture solutions. I submit this declaration to provide my opinion, based on my years of experience in data modeling, as to the time it takes for an experienced data modeler to create the schema for a golden copy model, and then to implement fully the loading of a golden copy database.

2. In connection with preparing this Declaration, I have reviewed the Declaration of David Wynter dated October 17, 2007, the Declarations of Sol Zlotchenko, Alexander Kouperman, and Sameer Shalaby dated October 23, 2007, and STPenable's Data Dictionary.

3. Although we were both employed by Reuters during the same period, I had never met Mr. Wynter until today, October 28, 2007. I spoke to him for the first time on October 26, 2007, in connection with my preparation of this Declaration. I understand that over the years, Mr. Wynter and one of my partners, Anthony Coates, have periodically consulted with one another professionally on an informal basis.

Background

4. I have approximately twenty-five years of experience in the areas of data architecture, system/business analysis, data and system modeling, XML/XSD messages, DBMS design and administration, and programming languages. In particular, I have years of experience in the modeling of financial instruments and the financial sector. Attached as Exhibit A is a copy of my curriculum vitae.

5. I have a BA Honours Degree from Leicester University in Accountancy and Economics and a BSc Honours Degree from Open University in Mathematics and Computer Science. I am currently studying for an MSc from Open University in Computing for Commerce and Industry.

6. Among other employment, I have worked as a Data Architect for Reuters Ltd. on the Numerical Data Architecture (NDA) database – the Reuters equivalent of a "Golden Copy" database for financial instruments. Mr. Wynter was aware of my work at the time.

7. Since 2005, I have been a Senior Partner of Miley Watts, which I co-founded. Among the large scale projects I've worked on, I was engaged by Barclays Global Investments to implement their Corporate Data Model, as part of the Model Driven Architecture programme, covering all of the information, including financial instruments, required to carry out the business of investment banking.

Creating the Schema for a Golden Copy Model and Implementing the Database

8. Mr. Wynter states in his Declaration that it took him about one month to create the schema for his golden copy database, which does not contain over the counter derivatives, the instruments that account for 95% of the complexity of golden copy modelling. A model excluding over the counter derivatives could be produced in less than a month.

9. It is important at the outset to distinguish between (1) creation of the data model (*i.e.*, the design or framework describing the data that will be present in the application) for a golden copy financial database, and (2) implementation of the actual application itself.

10. Creating the schema for the model is a very straightforward undertaking for someone with experience in data modeling and a sophisticated knowledge of the financial industry. A model that contains only securities that are available from public feeds like Reuters (*i.e.*, that does not contain synthetic products like "swaps", "baskets" and other over the counter derivatives) is standard in nature, due to the fact that the instruments themselves are well defined and stable over time. (Debt instruments have been traded for the better part of 1,000 years in Europe and equity instruments for about 800 years.)

11. In fact, I can think of at least three publicly-available sources where one can find the basic framework for creating precisely such a model, *e.g.*, Market Data Definition Language (from MDDL.org).

12. In addition, given access to details of the market data vendor feeds, the data items in the schema will generally be direct mappings from the financial feeds.

13. That being the case, creating the schema for a golden copy model that does not cover over the counter instruments can easily be accomplished within a month's time. In fact, the core framework for such a model could be done within a few days.

14. On the other hand, full implementation of the database takes a more substantial amount of time, involving, among other things, the potential addition of asset classes; perfecting the disambiguation process; and data quality testing. I understand that it has taken David Wynter about 15 months of effort to implement his golden copy database. In addition, when asked, Mr. Wynter told me that Lipper personnel have provided project management, business analysis and data testing. This time frame matches my expectations for the product I understand he has created for that company.

Differences in the Two Databases

15. The schema of Mr. Wynter's and Paldyne's golden copy data models may be similar, because any golden copy schema has to be based on a conceptual model that incorporates a finite set of publicly-available financial data. However, the implementations of the software for loading these golden copy schemas are materially different.

16. In particular, there is a dramatic distinction between an object-based programming language (such as Java, used by David Wynter) and a set-based programming language (such as Microsoft's SQL stored procedures, used by Paladyne). These two programming languages represent completely different ways of thinking and approaching the problems to be solved in loading a golden copy database. Certainly, simply "cutting and pasting" from one language into the other would not result in working code because the two languages have different structures and keywords, and this requires software for each to be written in fundamentally different ways.

17. The declarations submitted by Paladyne attempt to minimize these distinctions as if they are irrelevant, but they are in fact essential. To use an analogy, it is possible to translate a French novel into English using available language translators, but because the English grammar

and expressions are substantially different from French grammar and expressions, the result would be a collection of English words that may not have the same meaning as the original French prose. You cannot translate the true meaning of one into the other without completely re-creating the structure of every sentence, taking a significant amount of time in the process.

18. Moreover, the fact that the ends to be served by the two databases are ultimately based on the same core customer requirements does not render the distinction in how one gets to those ends any less fundamental. There is nothing unique about the core business logic of a golden copy, which will invariably be the same in *any* golden copy: the data modeler has to include all of the securities and their attributes, which are culled from publicly available data feeds like Reuters; then he or she has to create identifiers for each security in the golden copy schema and cross-reference these to the standard security identifiers (*e.g.*, CUSIP, ISIN, and SEDOL) in order to avoid duplication (*i.e.*, the disambiguation process). Any builder of a golden copy necessarily has to operate according to this logic.

19. Therefore, to say that the core business logic behind two golden copy databases is the same is to state an obvious proposition. For that reason, it is not reasonable to conclude that the implementations of the two products must be the same just because they are designed for customers who have similar (industry standard) requirements. The methods of implementing standard logic can and do differ, and STPenable's method is fundamentally different from that used by Paladyne.

20. In this same vein, on pages five to six of his Declaration, Mr. Zlotchenko discusses the "Security Identifier Cross-Referencing" that is involved in creating a golden copy database, and suggests that this task is a complicated or unusual one. In fact, any experienced data modeler knows how to do this cross-referencing; the problem he poses is a standard

problem with standard solutions based on widely-known techniques. "Security Identifier Cross-Referencing" is just a variation of a universal data model for integrating data applications.

21. Nor is the task time-consuming; the design for the cross-referencing Mr. Zlotchenko mentions could be done in a day if business requirements are pre-defined.

22. With respect to the remaining bullet points that Mr. Zlotchenko lists on pages 6-7 of his Declaration, it is my understanding based on my review of Mr. Wynter's Data Dictionary that his golden copy does not contain any of those features. Nonetheless, "Historical Data Storage," "Audit Trails," "Templating," and "Document Management" are common features of data applications with a well established set of solutions; merely listing these items seriatim does not identify what particular aspects of these features Paladyne claims are trade secrets.

Contributors to the Difference in Timing

23. A key point in understanding the apparent differences in timescales between the Paladyne and STPenable implementations is that the two applications are not functionally equivalent. As previously mentioned, STPenable restricts itself to a much smaller set of instruments and a much smaller set of functional requirements. With these limitations on the functionality, it would take a much smaller amount of effort to produce a working application than it would to produce an application with the complexity of Paladyne's product, or of any of the other market-leading golden copy products.

24. Based on my years of experience in data modeling and IT in general, the following additional factors must also have contributed to the difference in completion times as between Mr. Wynter's golden copy project and the development of Paladyne's product:

- David Wynter's product has no user interface (*i.e.*, no viewing application) analogous to Paldyne's security master. A product with that kind of front-end

system is far more complicated to develop. Building and perfecting an entire suite of software (with all parts working together), as opposed to just an independent golden copy data model, is a significantly more time-intensive undertaking.

- David Wynter's product has to satisfy the needs of only one client, Lipper Ltd, whereas Paladyne's is a comprehensive commercially-available product that must necessarily be suited to the needs of a wide variety of users. That more limited function invariably translates into a more streamlined and time-efficient creation of the product.
- The relative ability of people who work in data modeling, as in other fields, varies tremendously. Often a modeler at the top of his or her game can do in one week what another might take three months to accomplish.
- Similarly, it is a commonly understood reality in the data modeling field, as in many others, that a project simply takes longer when it is assigned to a team of people as opposed to one person working alone, especially when the team consists of both technical people and business people, neither of whom fully understand the areas of expertise of the others.
- As I have seen firsthand in the course of my career, there are tremendous inefficiencies, and a lot of wasted time, when work is done by "committee." Accordingly, a comparison between the time it takes for one expert data modeler to perform a job and the time it takes a large team to do the same job is simply not a fair comparison.

Pursuant to 28 U.S.C. § 1746, I declare under penalty of perjury that the foregoing is true and correct.

Dated: New York, New York
October 28, 2007

A. S. Miley

Adrian Miley

EXHIBIT A

CV for Adrian Miley

Name Adrian Stephen **MILEY**

Contact Phone 07795 830248 E-Mail: adrian.miley@mileywatts.com

ADRIAN MILEY PERSONAL PROFILE

Data / Application Architect and **Business Analyst** with in-depth experience across a wide number of business sectors and a former **Management Accountant**.. Together this combination of training and experience allows him to bring a technically robust yet highly business focussed approach to solution design, prioritisation of objectives and decision making.

I have a proven, and provable, track record of successfully integrating into both Public and Private Sectors business environments and many business functions including Financial & Management Accounting, Personnel & Human Resources, Sales & Marketing and Customer Relationship Management.

Within these sectors I have designed, and successfully deployed, a wide range of solutions ranging from Departmental Management systems through to Enterprise-Wide Corporate Data environments.

In addition throughout my working life I have maintained a reputation for thoroughness and accuracy plus timeliness in producing the right solution at the right time.

Of equal importance is a reputation for producing innovative solutions to complex problems and satisfying requirements in a sustainable manner and my peers frequently describe me as "innovative", "inspiring" and "original" with an "evangelical" but "intellectually robust" presentation style. This is an approach I actively develop (and encourages in others) and I continually look for emerging technologies that not only provide simplicity of development but also produce tangible returns on investment and stability into the long-term future.

For the last few years, as a result of a desire to build systems that are sustainable across technological change, I have focused on Data Processing architectures based on Service-Oriented principles using Model Driven Design and Data Driven Approaches. In this area I have a well-established and coherent vision of the continually re-emerging patterns that underpin systems and how those patterns can be re-used on different applications.

In summary, Adrian puts in the effort to establish solid foundations for his ideas and then turns them into a sustainable reality. More than anything he likes the challenge this represents!

SKILL SUMMARY

Data Architecture 15+ years Current

Have designed just about every variation of Data Processing Architecture imaginable over the years including n-tier (up to 5-tier applications), both tightly and loosely coupled, distributed processing, interactive and batch processing, high transaction throughputs (up to 1,000 transactions per second), Data Warehousing, Decision Support and On-Line Transaction Processing. (I really enjoy doing this stuff!)

However they all have one thing in common which is that successful architecture is built around well-defined patterns and interfaces and the strict implementation of those interfaces and patterns. It may take some effort to implement but everything else, such as testing, support and maintenance, becomes much more predictable because of it and, hence, saving significant time and money.

This requires strength of will and commitment – both of which he has in abundance.

System / Business Analysis 25+ years Current

Have used a number of different methodologies over the years – such as **SSADM**, **DSDM** and

RUP - as the basic approach to Systems Analysis but with all of them the skill is obviously in recognising what aspects of the system are significant at which stage in the analysis process.

As such nowadays I tend to take a striped down approach and rely more on diagrams taken from a range of notations to convey the detail – e.g. data-flow diagrams are still best for describing large data-flows – rather than follow a prescriptive method.

Data and System Modelling 20 years Current

Have used all mainline data modelling notations, such as **ORM**, **ERD**, **OMT**, **UML** and **LDS,** plus defined bespoke notations to meet particular requirements.

Tools including **Oracle Designer**, **Rational System Modeller**, **Visio-Modeller**, **MS-Visio**, **Sparx Enterprise Architect** and **XML-Spy**.

XML / XSD / Messages 10+ years Current

Have worked in many different message and service focussed environments using both loosely-coupled as well as tightly-coupled messaging infrastructures – e.g. **TopEnd**, **Tuxedo, XML** and **Oracle Queues**.

Have also produced numerous XML encoding standards to provide coherent and consistent encoding for the data in a particular business domain.

DBMS Design and Administration 20 years Current

Although no longer conversant to a DBA level of detail I have worked with many different flavours of DBMS over the years including **Object** and **Hierarchical** as well as **Relational** DBMS. Significantly these include **Oracle** (all versions from 6.0 to 10g), **DB2**, **SQL-Server** 2000 and less widespread databases such as **Ingres**, **Informix**, **Versant** and **TimesTen.**

Configurations used include parallel-server, message queues, N-tier (up to 5-tier) topology, distributed and replicated systems.

Programming Languages 20 years Current

I have worked with a large number of different programming languages, including **Cobol**, **C**, **Pascal**, **Visual Basic** and **Shellscripts** and platforms including both **MS-Windows** and **Unix** (Solaris, AIX etc) and nowadays focus mainly on **PL/SQL**, **SQL** with some **C#** (Microsoft .NET).

However I don't find that the implementation language is significant from an Architecture and Design viewpoint. Much more important are the data patterns that underpin a particular development environment e.g. whether the language is based on object, procedural or set-based concepts, whether it is built on loosely-coupled or tightly-coupled interface binding, is it distributed or centralised processing, short duration or long duration transactions and so on.

EMPLOYMENT HISTORY

Company **Miley Watts LLP** **May-05 on-going**

Co-founder and Senior Partner at Miley Watts LLP is a small IT consultancy specialising in providing information and data architecture solutions primarily in the government and investment banking sectors as well as participating in a number of standardisation initiatives such as OASIS, FISD and ISO working groups.

Miley Watts is also develops data management applications.

As well as developing our own software applications and frameworks to govern the management, definition and distribution of metadata and master data within a federated data environment, Miley Watts LLP also provides direct consultancy services to clients for architecture and design of model driven, service oriented environments.

Within this context, specific large scale projects that I have been involved with include:

Position **Barclays Global Investments (BGI)** **Apr-07 on-going**

Enterprise Information Architect

Engaged by Barclays Global Investments to implement Model Driven Architecture (MDA) and a Service Oriented Environment across the whole of BGI. Specific responsibilities were:

- Production of Corporate Data Model (CDM) covering front, middle and back-office data requirements as central platform independent data model from which other models are generated. Reference material for this included:- MDDL, FpML, FIDM, MODM, Reuters, Bloomberg, gXML and various ISO standards.
- Define data modelling standards and conventions used within CDM and transformation rules for how UML is to be interpreted in specific target domains.
- Provide advice on aspects of the service oriented environment and how those requirements could be met via MDA and the Corporate Data Model.

Much of this advice was based on the Content Forms Framework, previously developed by Miley Watts LLP, as a conceptual data framework describing the different forms that data can take and formalising the principles that apply.

Position **Department of Communities and Local Government** **Apr-07 on-going**

Commercial Energy Performance Certificate Legislation - Technical Consultant

Provision of consultancy services relating to requirements definition, analysis, design of Commercial EPC Register to support European directive for energy performance assessments of commercial buildings. Specific responsibilities were:

- Design and specification of Property & Addressing Database
-

Position **Department of Communities and Local Government** **June '05 – date**

Home Information Pack Programme – Data Architect & Technical Consultant

Engaged by Department of Communities & Local Government on implementation of the Home Information Pack (HIP) legislation with specific ownership of:

- A Technical Framework, based around a highly-distributed Service Oriented Environment, to standardise participation by industry stakeholders in the HIP market.
- Technical Specifications (including Business Process definitions, Business Data Model and Message specifications) for interactions within the HIP marketplace.
- Preparation of "Invitation to Tender" and "Requirements Definition" procurement of archival Home Condition Report Register.
- Providing advice on technical requirements across the industry and carrying out technical appraisals of prospective regulatory bodies.
- Leadership of Stakeholder Working Groups and interaction with key industry bodies, such as Council of Mortgage Lenders, Law Society and National Association of Estate Agents, to ensure understanding of the Technical Framework and legislative requirements.

Company **Reuters Ltd.** **July '01 – date**

Position **Fundamental and Reference Data (FRD) Sub-Domain Architect**

Environment FRD employs a wide range of technologies including Oracle RDBMS, Sybase, MS-SQL Server, Ab Initio (ETL), DataStage (ETL), Oracle Discoverer, FAST PowerSearch and developed using a variety of tools + languages including PL/SQL, Java, C++, .NET, Oracle Forms, Oracle Designer, Rational Rose, XML, XSLT, XMI, WSDL and many others.

The Reuters FRD Domain encompasses the historic Financial Markets data capability of Reuters.

As Sub-Domain Architect I was responsible for defining the architecture for many aspects of the FRD environment, including:

- **Data Modeller** and contributor to the development of the Reuters Data Model describing the full client-facing data present within the FRD domain.
- Architecture for **Metadata Services** to manage the metadata that defines the structure and characteristics

of data, including behaviour, and delivered a number of generic infrastructure services.

- Architecture for a **Federated Data Server** to enable a service oriented environment with model driven metadata identifying points of update and business rules controlling distribution of updates. This completely abstracted out the need to know where a piece of data was physically located in order to access it.
- **Unified Data Entry** environment integrating data entry activities into a single point of maintenance.
- Architecture for **Fine-Grained Access Authorisation** using a rules-based approach to generating authorisation expressions on demand based on the characteristics of the data being accessed.

Being a global company, the above are all designed with full internationalisation and multi-language support capabilities provided by the Metadata Repository.

Company	**Salmon Ltd.**	**Jan-99 to Apr-01**
Position	**Database Architect – Envision Project (BBC TV Licensing)**	
Environment	Oracle Parallel Server (8.1.7), Unix (AIX) on IBM-SP2 cluster, Java, Oracle Designer, PL/SQL, Terradata, Tuxedo, Natstar	

Database Architect for Envision project, the replacement **Television Licensing** system developed on behalf of the BBC for managing TV Licensing Automated Fee Collection, Prosecutions, Visiting and Call Centre Contacts.

In addition to the database architecture, specific responsibilities were:

- Producing the Business, Conceptual and Logical Data Models data constraints and domains definitions
- Design of high volume batch processes and data feeds in particular the mission critical processes such as Licence Renewals, Generating BACS claims and Payments processing, utilising advanced techniques, such as streamed / concurrent processing and parallel data loading, to maximise data throughput
- Design of ETL processes for extraction and loading into Data Warehouse
- Design of all server-side (PL/SQL) code including database Triggers, Packages, Functions and Procedures
- Designing software level Auditing layer (Oracle Auditing proved unsuitable) to implement legislative requirements

This database presented many unique problems for an OLTP application due to the volume of the managed data.

Company	**British Airways plc.**	**Jun-94 to Dec-98**
Position	**Senior Database Designer – Cobra O+D**	**Oct-95 to Dec-98**
Environment	Oracle (8.0.5, 7.3.4) on UNIX (Solaris), DB2 on MVS, Versant OODBMS, E6000 cluster and E10000, Oracle Designer, Rational Rose (OMT), ERWin, C++, TopEnd.	

Database Designer for an OLTP and DSS application for forecasting and optimising seat availability on future departing flights.

Responsible for database / application design involved me in many of aspects of the project and resulting in producing numerous solutions to the on-going problems of large volume high-performance complex data processing, such as

- Specification and design of large-scale data feeds using parallel and streamed processing techniques.
- Developing statistical methods for calculating potential importance of new O+D Routes as a means to reducing workload and increasing application focus on key data.
- Feasibility studies on various database architectures and defining final database architecture rolled out into production application.
- Many proposals for summarising and re-organising data for high performance retrieval including use of Partitioned Views and Tables and use of Oracle ROWID's as record ID's for fast navigation between tables.

Position	**Oracle Technical Consultant – Arcadia application support team.**	**Jun-94 to Sept-95**
Environment	Oracle7 and Oracle6, MVS, VMS, Unix, OS/2, C++, SQL*Forms (v3)	

Arcadia is a work planning application consisting of a partially distributed three tier database with a central MVS mainframe database, four Unix/VMS LAN databases and 50+ individual user databases. Responsibilities included:

- Supervising, estimating and planning product enhancements and bug-fixes.
- Producing feasibility study and planning migration from Oracle6 to Oracle7 and transforming the application to a true Client / Server configuration and producing estimates of conversion cost and plans.
- Producing business proposals to deliver the package into other British Airways business areas.

Company	**Northamptonshire County Council**	**Mar-89 to May-94**

Position **Senior Analyst Programmer – Planning and Transportation**

Environment Oracle6, Unix (Solaris), Windows, SQL*Forms (v3), C / Pro*C, Cobol, Pascal

Design and development of Oracle based Highways Management and Inventory System (HMIS) - the core database for all Highways applications subsequently developed by NCC. This application had a number of groundbreaking features (for 1990) such as a Street Gazetteer, to identify locations, and a GIS (MapInfo) to display locations and query details of Highway Inventory.

Subsequent developments, building on the capabilities of HMIS, were Street-lighting Maintenance, Traffic Accidents (interfaced to Northamptonshire Police) and Highways Inspection.

In addition to the above, I also undertook responsibility for:

- Oracle technical consultant to projects within other NCC departments such as Social Services and Education.
- Supervision and training of programmers during their six month initial induction period prior to being placed within other projects.
- Production of BS5750 development standards relating to aspects of analysis, design and programming languages.

Company	**Independent Express Parcels Ltd.**	**Sept-83 to Feb-89**

Position **Analyst Programmer – Accounting Systems** **Sept-87 – Feb-89**

Environment VMS on Vax-750 and VAX-3000, VAX-Basic, TDMS, VAX-Datatrieve, C, Access 20/20, Pascal

Following decision to take development of Accounting systems in-house transferred from Management Accounting (see below) into Software Development.

Responsible for specification, design and development of bespoke Accounting and Market Analysis Systems integrated into the existing Management Accounting systems. Specific systems developed included Fixed Asset Management, Fleet Management, Sales Analysis and Profit / Loss Reporting.

Position **Cost and Management Accountant** **Oct-83 to Aug-87**

Reporting to board-level and managing staff of approximately 50 people via three second-tier line managers. Responsible for all aspects of Cost and Management accounts, including General, Sales and Purchase Ledgers, Payroll, Fixed Assets, Lease Accounting, Stock Control and Distribution systems.

This position provided my first exposure to IT as I was responsible for co-ordinating software development through an external supplier and produced the Systems Analysis and Requirements Definition documents that drove those developments.

EDUCATION / QUALIFICATIONS

Open University	Currently studying for MSc in Computing for Commerce and Industry.
Open University	BSc Honours Degree in Mathematics and Computer Science
Leicester University	BA Honours Degree in Accountancy and Economics
Institute of Cost and Management Accountants (ICMA)	Qualified 1985 (membership now voluntarily lapsed due to move into Information Technology)
British Computer Society	Member from 1997 – now voluntarily lapsed

In addition to the above I have many other non-IT qualifications, IT Training Courses and academic qualifications too numerous to really list here.

PUBLICATIONS, ARTICLES & PRESENTATIONS

Over the years I have published many papers, articles and presentations on various aspects of Enterprise Data Architecture. This is just a selection relating to current areas of interest:.

1994	Patent Application	"An Indicator of the Probability of Potential Unimportance" - a discussion on analysing existing data in order to decide how to process new data received by an application. (British Airways is the patent holder)
2004	Paper	"Only One Version Of The Truth" (a discussion about Databases Of Record)
2004	Paper	"Everything Is Something Related To Another Thing" (a discussion on meta-modelling)
2005	Presentation	Synchronising Updates in a Distributed Data Environment
2005	Article	Synchronising Updates in a Distributed Data Environment - The Business Case
2006	Presentation	Content Forms Framework
2007	Presentation	Producing the Integrated Business Information Model
2007	Presentation	Understanding Classification Schemes